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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,953	12/22/2003	Judson Ames Cornish	JAC-20031221	9868

7590 03/30/2007  
Judson Ames Cornish  
646 Georgia Avenue  
Palo Alto, CA 94306

EXAMINER
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DAO, THUY CHAN

ART UNIT	PAPER NUMBER
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2192

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/743,953	<b>Applicant(s)</b> CORNISH, JUDSON AMES	
	<b>Examiner</b> Thuy Dao	<b>Art Unit</b> 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on n/a is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/22/04</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is responsive to the application filed on December 22, 2003.
2. Claims 1-19 have been examined.

### **Information Disclosure Statement**

3. The Office acknowledges receipt of the Information Disclosure Statement filed on March 22, 2004. It has been placed in the application file and the information referred to therein has been considered by the examiner.

### **Specification**

4. Applicant is reminded of the proper language and format for an abstract of the disclosure. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. (e.g., "*The invention ...*" in lines 1, 2, and 3).

Appropriate correction is required.

5. The disclosure is objected to because of the following informalities: all acronyms should be spelled out at the first appearance in the specification (e.g., page 8: SQL, XML; page 12: XSP; page 14: SMTP; page 17: TCP, URL, HTTP, MIME, ...).

Appropriate correction is required.

### **Claim Rejections – 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application

filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Publication No. 2003/0126136 A1 to Omoigui (hereinafter "Omoigui").

**Claim 1:**

Omoigui discloses *a method of specifying, generating, and running a data processing system, comprising:*

*(a) providing a plurality of predicates, each referring to a set of arguments ([0274], [0630]),*

*(b) providing a plurality of specifications, each of which defines valid argument values for said predicates, and refers to: a set of variables, and a set of clauses (e.g., predicate templates [0579], [1139]),*

*(c) specifying some clauses of said specifications by referring to one of said predicates, and to variables of the specification to specify values for arguments of the predicate (e.g., [0274], [0630]),*

*(d) providing a plurality of plans, which are able to be run to generate sets of valid argument values for said predicates (e.g., SQL queries, [0274]),*

*(e) providing a planning means which is able to generate said plans from said specifications (e.g., [0847]),*

*(f) providing an evaluation means which is able to run said plans to generate sets of valid argument values (e.g., [1144]),*

*(g) generating multiple sets of valid variables for some component steps of some plans, and testing said sets of valid variables for combinations which generate valid result arguments (e.g., [0643]),*

*(h) providing an input means which is able to provide input data values for a set of the arguments of a predicate (e.g., [0340-0341]),*

*(i) providing an output means which is able to output data (e.g., [0372-0374]),*

*(j) inputting argument values from said input means, evaluating input argument values to generate output argument values using said evaluation means, and outputting argument values using said output means (e.g., [0470], [0865], [1146]).*

**Claim 2:**

The rejection of claim 1 is incorporated. Omoigui also discloses *specifying some of said clauses by referring to: a set of generating clauses, which will generate a plurality of iterations, each with a set of valid variable values, and a set of aggregating clauses, which specify a further set of variable values in a current iteration based on the variable values in the previous iteration (e.g., [0865], [0899], [0974]).*

**Claim 3:**

The rejection of claim 2 is incorporated. Omoigui also discloses

*(a) some of said plans refer to an ordering of the clauses of one of said specifications (e.g., [0971], [1139]),*

*(b) said evaluation means further runs said plans by evaluating each clause in the order specified, using variable values generated by earlier clauses as input to later clauses, and by recursively selecting and running plans for clauses which are specified by predicates, generates valid variables by backtracking and re-evaluating an antecedent clause to generate further sets of variable values (e.g., [0973]).*

**Claim 4:**

The rejection of claim 3 is incorporated. Omoigui also discloses *said planning means comprises: selecting which clauses of said specification will generate which variable values, by first selecting clauses which generate the minimum number of different values (e.g., [1117], [1125]).*

**Claim 5:**

The rejection of claim 4 is incorporated. Omoigui also discloses *said planning means further comprises: ordering the clauses for sequential processing, by first*

*scheduling clauses that have the best combination of processing cost and number of different generated values (e.g., [0072], [0322], [0341]).*

**Claim 6:**

The rejection of claim 5 is incorporated. Omoigui also discloses *said evaluation means further recursively selects said plans by considering input argument values while running (e.g., [0865], [0899]).*

**Claim 7:**

The rejection of claim 1 is incorporated. Omoigui also discloses *(a) providing a data store which is able to store and retrieve data, (b) specifying some of said clauses by referring to locations in said data store (e.g., [0206], [0254], [0270]).*

**Claim 8:**

The rejection of claim 7 is incorporated. Omoigui also discloses  
*(a) further comprising specifying some of said clauses by specifying an alteration to said data store (e.g., [0588]), and*  
*(b) wherein said evaluation means further comprises: altering said data store in accordance with the clauses that refer to an alteration in said data store and that are included in a successfully evaluated plan for said input (e.g., [0287], [0526]).*

**Claim 9:**

The rejection of claim 8 is incorporated. Omoigui also discloses *providing a transaction means of ensuring that alterations to the data store are atomic and independent (e.g., [0661], [0677], [0981-0982]).*

**Claim 10:**

The rejection of claim 9 is incorporated. Omoigui also discloses *said data store and the data values for said arguments and said variables are comprised of semi-structured data (e.g., [0276], [0309], [0313]).*

**Claim 11:**

The rejection of claim 7 is incorporated. Omoigui also discloses

*(a) providing a plurality of caches which are able to store sets of variable values, (b) storing precomputed valid values of some variables of said specifications in said caches (e.g., [0277], [0302]),*

*(c) providing a plurality of indexes, each of which is able to accept values for a predetermined subset of the variables in one of said caches, and to return all matching sets of the remaining values (e.g., [0340-0341]),*

*(d) providing an indexing means which is able to create one of said indexes given one of said caches and a predetermined subset of input variables (e.g., [0372-0374]),*

*(e) and wherein said evaluation means further comprises: generating some variable values by inputting other variable values into said indexes (e.g., [0638]).*

**Claim 12:**

The rejection of claim 11 is incorporated. Omoigui also discloses

*(a) further comprising specifying some of said clauses by specifying an alteration to said data store (e.g., [0372-0374]),*

*(b) wherein said evaluation means further comprises: altering said data store in accordance with the clauses that refer to an alteration in said data store and that are included in a successfully evaluated plan for said input (e.g., [0470], [1146]).*

**Claim 13:**

The rejection of claim 12 is incorporated. Omoigui also discloses

*(a) some of said plans refer to an ordering of the clauses of one of said specifications (e.g., [0865]),*

*(b) said evaluation means further: runs said plans by evaluating each clause in the order specified, using variable values generated by earlier clauses as input to later clauses, and by recursively selecting and running plans for clauses which*

*are specified by predicates, generates valid variables by backtracking and re-evaluating an antecedent clause to generate further sets of variable values, and recursively selects said plans by considering input argument values while running (e.g., [0899], [0974]).*

**Claim 14:**

The rejection of claim 5 is incorporated. Omoigui also discloses (a) *providing a data store which is able to store and retrieve data, and (b) specifying some of said clauses by referring to locations in said data store (e.g., [0206], [0254], [0270]).*

**Claim 15:**

The rejection of claim 14 is incorporated. Omoigui also discloses  
(a) *further comprising specifying some of said clauses by specifying an alteration to said data store (e.g., [0287], [0526]), and*  
(b) *wherein said evaluation means further comprises: altering said data store in accordance with the clauses that refer to an alteration in said data store and that are included in a successfully evaluated plan for said input (e.g., [0526], [0588]).*

**Claim 16:**

The rejection of claim 15 is incorporated. Omoigui also discloses  
(a) *providing a plurality of caches which are able to store sets of variable values, (b) storing precomputed valid values of some variables of said specifications in said caches (e.g., [0277], [0302]),*  
(c) *providing a plurality of indexes; each of which is able to accept values for a predetermined subset of the variables in one of said caches, and to return all matching sets of the remaining values (e.g., [0340-0341]),*  
(d) *providing an indexing means which is able to create one of said indexes given one of said caches and a predetermined subset of input variables (e.g., [0372-0374]), and*  
(e) *wherein said evaluation means further comprises: generating some variable values by inputting other variable values into said indexes (e.g., [0638]).*



**Claim 17:**

The rejection of claim 16 is incorporated. Omoigui also discloses *providing a transaction means of ensuring that alterations to the data store are atomic and independent* (e.g., [0661], [0677], [0981-0982]).

**Claim 18:**

The rejection of claim 17 is incorporated. Omoigui also discloses *said data store and the data values for said arguments and said variables are comprised of semi-structured data* (e.g., [0276], [0309], [0313]).

**Claim 19:**

The rejection of claim 18 is incorporated. Omoigui also discloses *said evaluation means further recursively selects said plans by considering input argument values while running, whereby a single declarative language can be used to specify the presentation, business logic, and data layers of a multi-tier application* (e.g., [0274]), and

*whereby the same semi-structured, self-describing data model can be used throughout the presentation, business logic, and data layers, and whereby the business logic layer specification can be used to drive the automatic creation of the best set of indexes for efficient data retrieval* (e.g., [0340]), and

*whereby the business logic layer can benefit from the backtracking and search power of rule-based engines, and whereby the business logic layer can benefit from the optimization efficiency of planning engines normally used only on the data layer* (e.g., [0341-0342]), and

*whereby the business logic layer can benefit from caching and indexing performance improvements normally reserved for the data layer, and whereby data layer declarative queries can include user-defined functions, arbitrary iterative algorithms, and object-oriented dynamic-dispatch as part of their specifications* (e.g., [0579], [1139]), and

*whereby applications do not require garbage-collection or any memory management by the programmer, and whereby application source code can be specified without the run-time side-effects of function arguments passed by reference, of variable assignment and reassignment, or of long-term data store changes, and is thus amenable to automated correctness checking and automated re-writing (e.g., [0274], [0276], [0309], [0661]).*

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US Patent Publication No. 2002/0123984 A1 discloses a framework for dynamic query of server applications.

9. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone is (571) 272 8570. The examiner can normally be reached on Monday, Tuesday, Thursday, and Friday from 6:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.


Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2192

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T. Dao



TUAN DAM  
SUPERVISORY PATENT EXAMINER